Pond-Less Falls

DIY Cascade Boxes and Canyon Matrix™

Installation Guide

For use with

DIY Cascade Boxes: #PB1762, #PB1359, #PB1861

Canyon Matrix: #PB2989

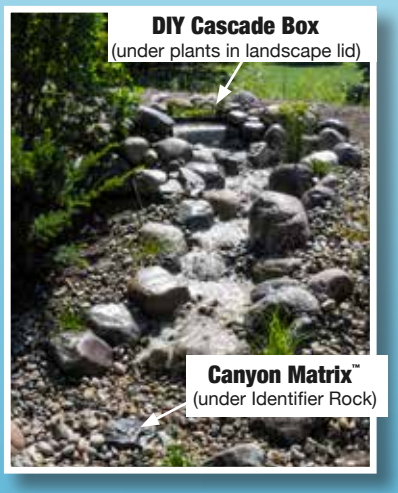
Blue Thumb

THE BLUE THUMB POND-LESS SYSTEM

A Pond-Less Cascading Waterfall is a type of waterfall that functions similar to a pond waterfall, except that the "pond" is created underground in a closed reservoir system. Water is pumped through the **DIY Cascade Box** creating a waterfall that spills over rockwork and then disappears through a rock bed back into the underground basin.

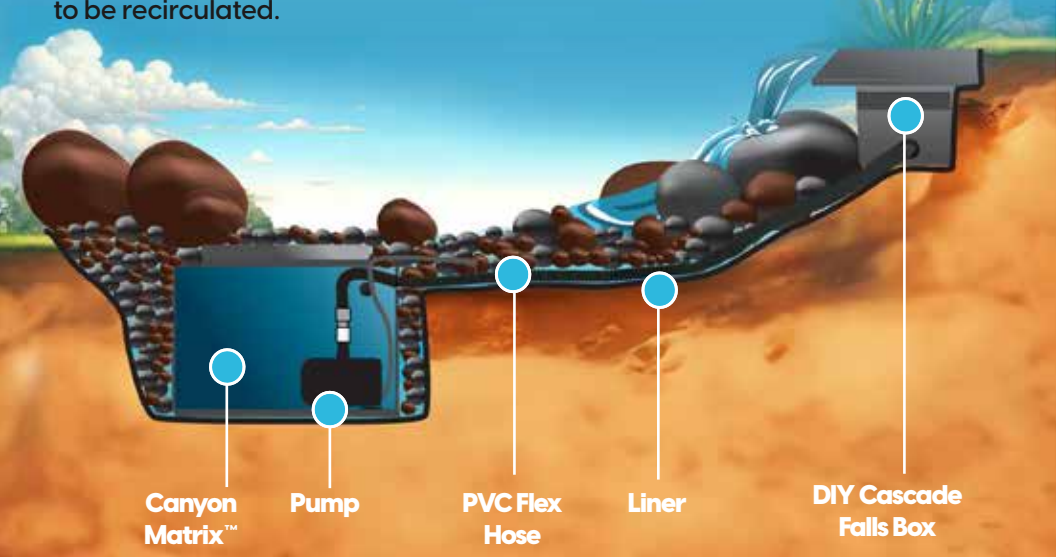
Creating a Blue Thumb Basin

We recommend completing the reservoir/ basin before adding the **DIY Cascade Box** to the top of the stream. A hole is dug to the size, depth, and orientation of the **Canyon Matrix**. The hole is then lined with a flexible **Liner** to hold the water. The **Canyon Matrix** is added to protect the water pump and keep space open for the reservoir water. After it is formed to the basin and the stream, the liner will be secured to the **DIY Cascade Box** at the top of the stream. Rockwork and plants will disguise the system so it looks natural.



How it Works

When the waterfall is turned on, water is circulated from beneath rocks and gravel by a submerged **Pump** located inside the protective **Canyon Matrix** on the lined basin bottom. The water is pumped up through a **PVC Flex Hose** up the stream to the **DIY Cascade Box** The water passes through the **DIY Cascade Box**, where it is filtered before flowing out of the spillway creating the waterfall that flows down the streambed before disappearing into the underground reservoir basin to be recirculated.



DIY CASCADE BOX SPECS

Included with DIY Cascade Boxes

- One-Piece Molded Construction with Integrated Landscape Lid
- Two Factory-installed Spinweld Inlets
- Plumbing and Fittings Needed
- Lifetime Manufacturer Warranty

20” DIY Cascade Box

- **Dimensions:** 20”W x 8”L x 7”H
- **Max. Pump Flow:** 2500 gph
- **Waterfall Spillway Width:** 20”
- **Inlets:** Two 1.5” Spinwelds
- **PVC Fittings Included:**
  - 1.5” PVC plug
  - 1.5” to 1” PVC male adapter
  - 1” PVC adapter hose connector

Mini 10” DIY Cascade Box

- **Dimensions:** 10”W x 8.5”L x 8”H
- **Max. Pump Flow:** 1800 gph
- **Waterfall Spillway Width:** 10”
- **Inlets:** Two 1” Spinwelds
- **PVC Fittings Included:**
  - 1” PVC plug
  - 1” PVC male adapter
  - 1” PVC adapter hose connector

DIY Corner Cascade Box

- **Dimensions:** 12W” x 12L” x 10”H
- **Max. Pump Flow:** 2500 gph
- **Waterfall Spillway Width:** 12”
- **Inlets:** Two 1.5” Spinwelds
- **PVC Fittings Included:**
  - 1.5” PVC plug
  - 1.5” to 1” PVC male adapter
  - 1” PVC adapter hose connector

DIY CASCADE BOX INSTALL

Waterfall Build Prep

This is a smaller waterfall build, the liner will extend from the basin to the falls. The water hose will extend from the pump to the Cascade Box **inside** the liner. Liner and Basin should be installed before placing the Cascade Box.

STEP 1

Prep Cascade Box Area

3a Fold the liner back over the installed basin area to plan the waterfall and stream. Place the Cascade Box at the top of your formed stream area.

3a Excavate the stream bed and Cascade Box areas.

STEP 2

Tamp Soil for Solid Base

2a Press and adjust until the Cascade Box feels solid.

2b Make sure the ground is level.

STEP 3

Lay the Liner up the Stream

3a Remove the Cascade Box to put liner in place. Remember the Cascade Falls Box and the flex hose will set inside of the liner.

3b Unfold the liner from the installed basin area. It should reach past the Cascade Box area. Adjust liner using rocks to hold it in place as you go.

STEP 4

Place the Cascade Box in Place on the Liner

Bring the top edge of the liner up the backside of the Cascade Falls Box and backfill under the liner with some soil around the back and sides of the falls box to help secure it in place while you build the waterfall. Adjust liner using rocks to hold it in place as you go. Place the Cascade Falls Box back in place.

STEP 5

Set up Cascade Box

5a Thread the PVC elbow into the spinweld on the Cascade box that you will be connecting to the hose.

5b Plug the spinweld on other side of the Cascade Box with the PVC plug.

STEP 6

Measure and Trim Hose

6a Set Cascade Box in position on the liner. Estimate where your hose will need to be trimmed to accommodate its connection to the Cascade Box.

6b Trim away any excess hose.

STEP 7

Connect to Hose

7a Using the supplied PVC Cement, attach the flexible hose to the PVC elbow on the Cascade Box.

7b Hold it in position for 60 seconds to allow the cement to set.

STEP 8

Adjusting the Cascade Box

Snug up the Cascade Box and attached flex hose by pressing into the liner. Level the Cascade Box so that the water will spill out over the waterfall evenly. Backfill under the liners as needed.

Finish Cascade Waterfall Box Install

Try to finish so that the first stone in front of the falls box sets just below the lip of the box, also frame in the sides of the Cascade Falls Box with a couple of stones that set right next to the lip on both sides. Fill the landscape lid on top with gravel and plants.

CANYON MATRIX™ BASIN INSTALL

NOTE: Call your local utility company prior to digging to ensure there are no utilities in the excavated area. Also, remove sharp roots and rocks that might puncture your liner.

Canyon Matrix™ Specs

Molded Auto Fill spinweld allows you to add an optional Auto Fill Kit (PB1342 sold separately)

STEP 1

Plan and Prep Basin Area

1a Set the Canyon Matrix into position and mark accordingly so you’ll know how big of an area to excavate.

1b You may want to determine the general placement of the waterfall box by making a rough estimate of the path that the stream will take to enter into the basin.

STEP 2

Excavate Basin

Dig the basin area to the length and depth of the Canyon Matrix. **Over-dig the width.**
The two long slotted sides need an extra 3 inches on each side for water flow and filtering as shown in Step 5.

Dig the hole approx. 28” long x 13” deep, and at least 22” wide.

STEP 3

Install Protective Underliner & Rubber Liner

3a Underliner - Unfold the protective underliner and lay it in the basin. Work your way from the bottom out to ensure the underliner is installed properly running it up the stream as far as possible. It’s ok if the underlayment doesn’t go all the way up to the Cascade Box.

3b Rubber Liner - As you unfold the rubber liner you’ll notice it is longer than it is wide. Center width-wise in the basin on top of the underliner. The length should reach past your waterfall box placement.

Keep a 6” overhang all around the basin and up the streambed. Do not cut any of the excess liner at this point.

STEP 4 Install the Canyon Matrix

Now that you have the underliner and liner installed, place the Canyon Matrix into position. It should be somewhat tight on the **short ends** of the Canyon Matrix and centered with 3" of space on both long sides. This will allow water to run through the slots and into the Canyon Matrix to the pump.

Tip: Pre-rinse all stones before placing in your stream. This will help keep water cleaner during start up.

STEP 5 Inside the Liners - Fill in the Long Sides with Gravel

Using smaller stone such as river rock, fill both 3" spaces on the long sides between the liner and the Canyon Matrix. These stones should be large enough that they won't slide through the slots into the Canyon Matrix. This stone will help filter the water before entering into the Canyon Matrix where the pump will sit.

STEP 6 Outside the Liners - Backfill the Short Sides

Next, lift the liners up and backfill around the short sides of the Canyon Matrix using topsoil or sand. Make sure to pack down to prevent future settling. Canyon Matrix installation is complete.

It's that easy!

Finish Canyon Matrix Basin Install

The installed basin is ready for your pump, plumbing and connection to a waterfall box. Congrats!

Scan the QR code at right for a quick informational video on the Canyon Matrix™ including tips for installing multiple units.

Basin Layout Recommendations

Optional Automatic Water Fill Kit

Item# PB1342

Depending on a number of factors, up to 1/2" of evaporation is possible per day. You may keep your water level optimal by either filling the basin from a garden hose or by installing an automatic water fill kit.

We recommend the Blue Thumb Hudson Automatic Water Fill Kit. This kit can be connected to any 1/2" line or garden hose to automatically replace any evaporated water.

Recommended Routine Water Treatments

Item# PB2682

Water treatment use depends on product, time of season, and condition of the water feature. These water treatments clear debris and odors from waterfalls and streams. Use as directed. Safe for wildlife, birds, and pets.

Item# PB2057